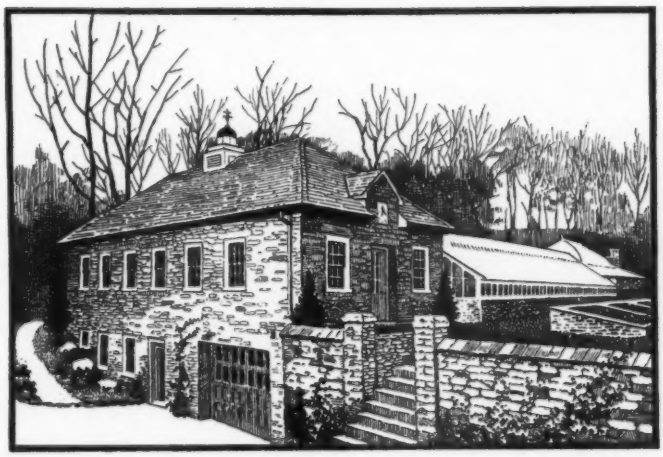
ARBORETUM BULLETIN

OF THE

ASSOCIATES

DECEMBER, 1941



THE
MORRIS ARBORETUM
OF THE
UNIVERSITY OF PENNSYLVANIA

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Chinese Elm

Ulmus parvifolia Jacq.

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FRONTISPIECE AND COVER ILLUSTRATION

THE TREE shown on the frontispiece is the true Chinese Elm, *Ulmus parvifolia*. This specimen, measuring some forty-two feet in spread and fifty feet in height, is growing at the Arboretum on the north side of the Swan Pond.

Ulmus parvifolia is native to North and Central China, Korea and Japan, and was introduced in 1794. It is not common in cultivation but is nevertheless frequently confused in horticulture and the trade with the Siberian Elm, *Ulmus pumila,* which is often referred to by the name of "Chinese Elm." *U. pumila* is a native of Eastern Siberia, Manchuria and Korea and was introduced in 1860. This is the rapidly growing tree which is being extensively planted in the drier Middle Western States. *U. parvifolia* is slower growing and scarcely winter hardy much north of Philadelphia; but, with its dark and roughened bark and small glossy leaves, a mature specimen of this species is an exceedingly handsome tree. *U. parvifolia* flowers in early September, and on December 8 this year it still carried a heavy crop of fruit. The Siberian Elm, *U. pumila,* flowers in May and ripens its fruit soon afterwards. Time of flowering is thus a certain character by which the two species may be distinguished.

THE COVER DESIGN is a pen drawing of the new head-house erected in recent months across the west end of the existing "growing-on" greenhouse. The new greenhouse is not visible from this angle.

Construction is of native Chestnut Hill stone and of a design to harmonize with its surroundings and which has also permitted the reutilization of the small paned windows, interior doors and other material from an old but outmoded structure at the Farm. The pleasing weathered-gray Salem Colonial roof shingles are of a type originally designed for the principal buildings of restored Williamsburg.

The lower floor of the building provides storage place for tools and mechanical equipment, together with a suitable headquarters and facilities for the men of the Arboretum. The upper floor, on a level with the greenhouses, contains an ample work and potting room, offices for the head gardener and for records, a tool room and a small laboratory in convenient proximity to the research section in the new greenhouse. There is also a large and well lighted storage loft.

Both cover drawing and frontispiece photograph are by Gustave Liebscher.

Henry T. Skinner

AN INTERESTING VARIANT OF WHITE SPRUCE

In August, 1941, a striking and decorative departure from the normal white spruce, *Picea glauca* (Moench.) Voss., was found growing wild on Mount Desert Island, Maine. The variant, which appears to be distinct from forms previously described, is represented, so far as observed, by a single tree growing in a clump of typical wild native white spruce trees (Fig. 1). It is located on Otter Cliff, between

Fig. 1. *Picea glauca* (Moench.) Voss. forma *buxoides*. Specimen on Mt. Desert Island, Me., with neighboring normal white spruce.

Otter Point and Thunder Hole, on the ocean side of Ocean Drive in the Acadia National Park.

The tree is pyramidal in form (not unlike the normal), about thirty-five or forty feet high, and is sixteen inches in diameter at breast height. Nothing definite is known concerning its age, but there is no obvious evidence that its growth rate has been essentially different from that of the typical white spruce trees all about it. Leaves do not differ markedly from those of the parent species, although in color the foliage mass may give the effect of a somewhat denser and darker green.

Its most striking characteristic is undoubtedly the very dense compact outer surface, giving the tree, as the proposed name (*Picea glauca* (Moench.) Voss. forma *buxoides* forma nova*) indicates, a box-like appearance. But the resemblance to box is in the surface only; obviously the tree is neither shaped like box nor dwarfed, but erect, pyramidal, and excurrent.

FIG. 2. Showing the densely branched, box-like surface of the variant, with an occasional normal shoot in which the intricate branching has not yet set in. The prominent hump (upper center) doubtless had a similar beginning.

Closer examination reveals that the box-like surface is due to branching at the periphery, which becomes so intricate that the branchlets crowd each other both horizontally and vertically. The result is an outer surface so "solid" and compact that, seen from the outside, it hides all within. So dense is this periphery that it alone retains living needles, all the rest being shaded out. Looking up into the tree from below, this needle-bearing outer surface, only eight to twelve inches thick, appears as a continuous green shell, all within being bare. But for the trunk and bare branches, one might liken the tree to a giant tea caddy.

* Specimens from the tree have been deposited in the herbaria of the Morris Arboretum and of the Department of Botany, University of Pennsylvania.

Occasionally, the tip of a lateral branch grows out without undue branching and comes to project beyond the general surface of the tree (Fig. 1, left center, and Fig. 2, upper center). In all probability this "reversion" is temporary and dense branching sets in sooner or later, converting the projecting branch into a dense hump merging into the rest of the compact surface. It is in this way that the protruding bulges, occurring here and there on the surface of the tree, are believed to have developed. The leader appears not to be subject to the excessive branching. If it were, even occasionally, it would be difficult to understand how the tree from the beginning maintained a continuous central excurrent shaft.

Nothing is known of the genetic character of the variant. It is unlikely that it would come true to seed. When seen in August, 1941, the tree bore a goodly scattering of cones, which appeared normal in size for white spruce, in the upper part. If these bear viable seed, it may be possible to put the matter to the test. Despite the lateness of the season, cions sent in August, 1941, to the Arboretum were apparently successfully grafted on Norway spruce by Mr. Henry T. Skinner, Curator of the Arboretum. Additional cions will be secured for grafting early next spring, in order that the horticultural possibilities of this interesting variant may be more fully determined.

J. R. Schramm

THE ORIGIN OF THE BANANA

A "Graft" Story That Lasted Over 500 Years

The banana is a native of southeastern Asia. It was probably cultivated in its native habitat as early as 2000 years before Christ and its cultivation soon spread to neighboring lands. It had reached India well in advance of the invasion of that country by Alexander the Great. The Greeks thus learned of the plant, and Theophrastus described a fruit which we can identify positively as a true banana (*Eumusa*).

The actual spread of banana culture from India to the Mediterranean World, however, was greatly delayed. Neither the Egyptians nor the Hebrews have any record of the fruit and in the early centuries of the Christian era it was known in the West only from specimens cultivated in the gardens at Alexandria. Later, when the Arabs took control of the southern and eastern coasts of the Mediter-

ranean, the banana became an important article of diet and the Arabic descriptions of the plant are numerous and detailed.

Sometime between the introduction of the banana into Egypt and the widespread cultivation of the fruit by the Arabs all knowledge of the plant's original home was lost. Thus the Arabian philosophers found the banana to be somewhat of a problem. In fact they were in a dilemma. They believed that all good plants originally grew in the Garden of Eden and that the Garden of Eden was in no very distant country. Why, then, did not the old and sacred records mention the bananas along with dates and figs and other well known fruit? A way out of this dilemma was suggested, perhaps, by the fact that the tiny, abortive seeds of cultivated bananas would not germinate. The banana was sterile like the mule, and it could be propagated only vegetatively by transplanting suckers cut off from the base of the parent plant. If the banana was a hybrid, the problem was solved, for a hybrid plant need not have been produced during the original act of Creation. It need never have been in the Garden of Eden at all in spite of its modern name—the fruit of Paradise (*Musa paradisiaca* var. *sapientum*). In fact the hybridization which originally produced bananas could have occurred so recently that it was antedated by the sacred writings and thus their failure to mention bananas was explained.

Of course, any real hybridization would involve pollination and a sexual union of diverse parental stocks. The Arabs recognized sex in the date palm, which they pollinated by hand, and in the fig which they fertilized by the caprafig, but here the matter ended and the real sexual nature of plants in general remained unknown. Ordinary grafting, they thought, was in some vague way a sexual phenomenon. Indeed, the increased productivity of grafted plants was due, supposedly, to the act of grafting itself, assisted, of course, by some symbolic magic.

The alleged hybridizing operation which produced the banana is described by an Arabian scientist, Abd-al-Latif, who lived from 1162 to 1231 A.D. The account is found in his book "Descriptions of Egypt." From the French edition (Paris, 1810) p. 26:

"It is affirmed that the banana tree came originally from a mixture of the Egyptian water-lily (*Colocasia*) and the seed of the date; in order to produce this composite vegetable it is necessary to force a date seed into the interior of the tuber of the water-lily and to plant it in this manner."

This story, of course, grew and more details appeared. Salvatore Cusa (*Archivo Storico Siciliana, 1873*) summarized the belief as follows: "One [graft] was used, however, of the palm upon the colocasia from which they believed sprung a fine banana. For this purpose, they directed, you shall make an incision with a gold knife in the foot of the colocasia and within this you shall put a fruit stone of the female date, which is rounder and shorter than the male, you shall bind it completely and cover it with sticky clay, mixed with a few hairs covered with plant soil. Having done this grafting in January you will be able to gather fruit of the banana in July or August."

The directions for making this graft hybrid were specific and detailed. It would seem to us, with our present scientific notions, that nothing would be easier than for the Arabian scientists to try the experiment and record the positive or negative results. Obviously, however, they had other standards, for no negative evidence, even if any was obtained, was allowed to kill such a good story. More than five hundred years after Abd-al-Latif, this method of manufacturing bananas was still in good repute, as we learn from the testimony of Frederick Hasselquist, a pupil and friend of the great Linnaeus. Hasselquist traveled in Egypt, Palestine and Syria in the years 1749-1752, where he gathered material for his "Voyages and Travels in the Levant."

A number of his letters to Linnaeus were published as an appendix to this work. The following quotation is taken from the letter dated Cairo, September, 1750:

"I would speak of the Plantain-tree or Musa, the queen of plants, but it commands me to be silent, as it has had the good fortune to be completely described by the greatest master. I will however mention an old story, which is taken for granted by the Egyptian gardeners: they say that it can be produced by planting the kernel of a *Date* in the *Colocasia,* and that this was its first origin: a singular history of creation. I asked them, whether they ever made trial, as they so obstinately defended the truth of it; but they answered no, and that it was not worth while, as the plant grows so freely without culture: *et fabulosa juvant.*"

Conway Zirkle

Department of Botany,
University of Pennsylvania.

WATER-IN YOUR EVERGREENS

BEFORE the ground becomes frozen too deeply, it is worth thinking about the question of whether your evergreens have enough moisture around their roots to carry them through the winter. All of us remember only too well what happened to so many of our evergreens last year. Many of the narrow-leaved ones and in particular the broad-leaved Rhododendrons showed a great mortality rate last

FIG. 3. If your Rhododendrons are in this wilted condition on warm days, it means they are suffering from an extreme lack of available moisture.

spring. Following the long cold spell which had the soil water frozen, the sudden warmer spell accompanied by high winds in the middle part of last March caused water to be given off from the leaves which could not be replaced by the roots. Thus many of our prized clumps of Rhododendrons as well as parts of some of the narrow-leaved evergreens were killed. Death in this case was not caused by freezing, but by the lack of available moisture for the roots.

The abnormality of the environment, such as lack of summer rains and warm winds in late winter, we cannot help. But we *can* see to it that our plants go into

the winter season with plenty of water in the surrounding soil. The latter part of this summer and the early part of the fall have been extremely dry. If nature does not give us any water before the winter sets in completely, it is obvious that the freezing ground will catch our plants unprepared for the winter before them. To prevent this, let us see to it that all of our evergreens receive a good watering. On a day which is not below freezing, let us just lay a hose on the ground and let it run slowly all day. For further protection for the broad-leaved ones let us see that in addition to the water they have a good mulch of peat moss or oak leaves. This will prevent evaporation from the ground and will tend to prevent the soil from freezing so deeply.

The more care and affection we give our plants this fall, the more affection they will show us next spring—with good foliage.

Spencer H. Davis, Jr.

TREE-WOUND DRESSINGS

THIS PAPER embodies a brief discussion of tree-wound dressings and is the third in a series on Tree Care prepared by the writer.

Our knowledge of tree-wound dressings is in a controversial state. When tree wounds are not properly treated, or receive no care, the span of life of a tree is shortened. The proper care of wounds in trees is as necessary for their well being as for our own bodies. The organisms which cause disease in trees—and eventually ugliness and death—are in a sense more subtle and insidious than the vast percentage of those which may affect our own bodies, because they so often act more slowly and their work may be beyond repair even before it can be detected by the naked eye. Especially is this true of wood-destroying fungi, which gain entrance into trees only through injuries or wounds in the outer covering, epidermis and bark. Since these organisms, as well as wood-destroying insects, are ever lurking about it is essential for the well-being of the tree to protect its wounds with antiseptic and waterproof dressings.

Purpose and essential properties of wound dressings

The primary purpose of a tree-wound dressing is the preservation of the exposed living bark, cambium, and heart-wood against destructive fungi and insects. The essential virtues of a tree-wound dressing should be:

1. The inability to cause serious injury to the cambium and accompanying tissues.

2. The capacity to penetrate the wood.

3. A chemical content of effective germicidal value.

4. The ability to prevent as much as possible the drying out and cracking of the wood.

5. The property of being practically insoluble in water.

6. The power to withstand extreme temperatures without being seriously affected.

Choice of wound dressing

Many tree-wound dressings have yielded more or less satisfactory results. But the kind which should be used will depend upon various factors, *viz.*, the size of the wound and its location—especially with reference to other wounds and particularly if they have decay—and its proximity to the ground; the kind of tree, its location, and physiological tone; the time of year the cut is made, etc. In fact there is much of vital importance involved in the treatment of the wounds of trees which cannot be adequately discussed in this brief account.

For wounds less than one inch in diameter, a good coating of orange shellac is usually sufficient. In case of larger wounds, it is important to use at least two different types of dressings, namely, one which is primarily a germicide, the other, a waterproofer.

Germicidal wound dressings

Due to its alcoholic content, orange shellac is one of the best germicidal tree-wound dressings in use at the present time. It is also a preservative, because it readily penetrates the wood. The inner living bark, the cambium, and the sapwood should be thoroughly coated with shellac as a protective covering before waterproofing dressings are applied because these materials may often severely injure these tissues. The writer does not regard orange shellac alone as a permanent tree dressing, but it is one of the best known materials for the protection of the cambium. Surgeons' or nurserymen's tape may be used at times in its place. A solution of copper sulphate (blue vitriol) (one pound to three gallons of water); also one of corrosive sublimate (7-7.3 grain tablet to one pint of water) have been recommended for the treatment of the exposed wood. Corrosive sublimate solutions should not be prepared in metal containers and should be used with caution since they are injurious to the skin. Germicides which are mixed in water do

not have the penetrating power of the alcohol in shellac; and if they are used, the inner living bark, the cambium, and the sapwood should first receive the shellac treatment.

Waterproofing dressings

Materials such as asphaltum and creosote paints, other commercially prepared paints, also those containing lead and zinc are generally used to sterilize and preserve the exposed wood. A few waterproofing dressings which seem to be most worthy of note are discussed in the following paragraphs.

Asphaltum. A number of tree-wound paints containing asphaltum may be obtained from various dealers. The paint which one investigator found to be most satisfactory, as compared with some other dressings, is asphaltum dissolved in a volatile hydrocarbon (gasoline, xylol, benzene). He found that it "consistently stimulated callus formation during the first year following treatment," and "was superior to others in preventing checking and cracking of the wood." Asphaltum dissolved in turpentine or mineral oil may often be injurious to the cambial region of the wound. The same is true for creosote mixtures, such as creosote and asphaltum, and creosote and coal tar, which are suitable for cavity work provided they are not applied to the cambial zone. In case these and the heavier asphaltum mixtures are used, it is highly important that about one-half inch on each side of and including the cambium be first shellacked. Creosote and its mixtures may often severely injure the living tissues in cherry, peach, plum, magnolia, tulip, maple and other trees.

Asphaltum paints and creosote and its mixtures are not always completely germicidal. Investigations have shown that a number of asphaltum paints are not antiseptic to the spores of some fungi. The same is apparently true for coal tar and creosote dressings, judging from the writer's observations of pruning cuts which were kept coated with these materials but in which wood decay appeared within four years. The wounds were not sterilized before the dressings were applied.

Bordeaux paint. This material is composed of Bordeaux powder and raw linseed oil. It is strongly germicidal and seems to be a superior dressing as a wood preservative, which is highly essential until the wound is completely callused over. Bordeaux paint cannot be applied as readily as some paints. A very thin coating is first rubbed thoroughly into the wood and then followed immediately by a heavier coating.

Bordeaux paint has a tendency to retard the development of the callus during the first season, but its high fungicidal power certainly warrants its use, especially on large wounds. It is objectionable because of its color and may not be desirable on ornamentals in prominent locations.

Lead and zinc paints. Good lead and zinc paints often prove effective waterproofers, provided the wound is sterilized before they are applied and is kept coated with the paint until completely callused over.

Shellac, varnish, paint. Where the color of the wound dressing is objectionable, the cambial region can be first shellacked and then the exposed wood sterilized with a copper-sulphate solution. After the surface of the wood has dried, it should be coated with shellac; when the shellac has hardened, it may be painted with a paint which will match the bark. After drying, the durability of the paint will be prolonged by a dressing of spar varnish. Or the paint may be omitted and a good spar varnish used in its place. The shellac-paint-spar varnish dressing is, in the writer's judgment, one of the most satisfactory tree-wound dressings. The main objection is the amount of time involved in application, but on particularly choice and conspicuous trees it certainly is desirable.

Wound dressings on Conifers

A common belief prevails that the wounds in trees which produce considerable amounts of resin, such as pines, spruces and other conifers, do not require special dressings, as do our deciduous trees. But, unfortunately, the resin which exudes from wounds on conifers is by no means completely fungicidal. The writer has learned by his own investigations that many wood-destroying fungi infect at least some conifers, pines, and spruces through wounds where the exposed wood may be heavily coated with resin. In fact, these organisms, as well as others, may be largely responsible for copious exudations of resin. The writer believes that large wounds in conifers should be protected with wound dressings until callused over, and that they should be inspected as regularly as those on deciduous trees.

Inspection of wounds

No matter what dressing is used, tree wounds—especially those an inch or more in diameter—tend to check and crack open. This condition does favor very very greatly the entrance of wood-destroying organisms. It is of very real importance that wounds be examined two to three times or more per year and kept coated over until callusing is completed.

In addition to checking and cracking, blistering—especially on large wounds—sometimes occurs. This condition seems to arise more frequently where creosote and asphaltum mixtures and other commercial paints have been used. Very commonly blistering is due to the exposed wood being insufficiently dry when the waterproofing is applied.

Conclusion

Wound dressings may yet be discovered which will yield better results and be of far more general application than those we now employ. Even the best of those we now use might become more effective with the keeping of case records and a better understanding of the real nature of trees. Our knowledge of how trees respond to the ever-changing factors of their environment, of the morphological and histological relations of branches to the part of the tree from which they arise, of the relations between callusing and the physiological tone of the tree, and of the biology of fungi and insects ever ready to prey upon them, is still so very inadequate.

Harlan H. York
Department of Botany,
University of Pennsylvania.

NOTES AND COMMENTS

THE MORRIS ARBORETUM takes pleasure in welcoming the following new Associates: Mrs. John C. Gilpin, Mrs. George Gowen Hood, Mr. Wm. Clarke Mason, Mrs. E. F. Rivinus and Mr. Walter Lee Sheppard, of Chestnut Hill, Philadelphia, Pennsylvania; Mrs. William G. Bond, of Holly Oak, Delaware; Miss Margaret Lancaster, of Fort Washington, Pennsylvania; Mr. Henry F. Riebe, of Germantown, Philadelphia; Mr. Robert M. Saul, of Rose Valley, Pennsylvania; and Dr. Donald R. Young, of Philadelphia.

J. R. Schramm, Director of the Arboretum and Head of Department of Botany, is continuing his research on the problems of reestablishing plant populations in the devastated Pennsylvania coal regions. In a progress report delivered before the Botanical Society of Pennsylvania on November 15, Dr. Schramm discussed a number of interesting points which have already emerged relative to the inability of plants to naturally repopulate these regions, presenting evidence, at the same time, that artificial methods of repopulation show distinct promise of success.

John M. Fogg, Jr., Associate Professor of Botany, assumed, on July 1, his new duties as Dean of the College of Liberal Arts and Sciences and Director of the College Collateral Courses of the University. Dr. Fogg plans to continue to teach and to carry on his studies dealing with a comprehensive account of the flora of Pennsylvania. Following the close of Summer School, Dr. Fogg and his family left for a visit to the southwestern states. Although this was primarily a pleasure trip, it provided abundant opportunity for botanical observations. Collections were made at a number of localities, principally in New Mexico, Arizona, Utah and Colorado, resulting in the accumulation of several hundred specimens which will be added to the herbaria of the Department of Botany and the Morris Arboretum.

William Seifriz, Professor of Botany, is the author of an article entitled "Reproductive Cycles in Plants" appearing in *The Caribbean Forester*, Vol. 3, No. 1, October, 1941. Illustrating by means of his unique motion pictures of protoplasmic movement, Dr. Seifriz addressed the Torrey Botanical Club in New York on the subject of the "Physical Properties of Protoplasm" on December 2, and gave a similar lecture at Hamilton College, New York, the day following.

Continuing his studies on the genus *Phlox*, Edgar T. Wherry, Professor of Botany, has recently published accounts of two representatives of this genus which merit the attention of horticulturists. In the April number of the *National Horticultural Magazine*, under the title "A New Hybrid Phlox," was described × *Phlox henryae*, a new hybrid. This had arisen spontaneously in the rock garden of Mrs. J. Norman Henry, at Gladwyne, Pennsylvania, and represents a hybrid of *Phlox bifida* and *P. nivalis*. Photographs accompanying the article show it to combine the features of the parents; in its relatively large corolla-limb it suggests the second-named species, but the deep notches in the lobes show the influence of the first. The color is a soft pink scarcely attained by any phlox now in rock gardens. The plant is to be propagated and distributed by the Nik-Nar Nursery, Biltmore, North Carolina.

In September, in the Notulae Naturae of the Academy of Natural Sciences of Philadelphia, Dr. Wherry published an account of the Phloxes of Idaho. It was found that sixteen species grow in this state and one of these, new to science, was named *Phlox idahonis*. This is not a rock plant, but grows in moist grassland, its leafy stems reaching a height of 20 to 30 inches. It bears in summer a flat-topped cluster of lavender-blue to purple flowers, three quarters of an inch in diameter. If this proves capable of cultivation under our eastern climatic conditions, it will be an interesting addition to the series of species phloxes for wild

gardening. The tangled nomenclature of several other phloxes is straightened out in the same article and a number of new species are described.

W. G. Hutchinson, Assistant Professor of Botany, attended the June meeting of the American Association for the Advancement of Science at Durham, New Hampshire, and spent most of the summer in research on various aspects of the biology of *Chromobacterium violaceum*. In this connection he will present a paper, prepared in collaboration with Mr. Albert Kelner and entitled "Study of Secondary Colonies of *Chromobacterium violaceum*" at the December 29 meeting of the Society of American Bacteriologists in Baltimore. Dr. Hutchinson was recently elected Secretary of Sigma Xi.

Harlan H. York, Professor of Botany, spent the past summer as Consulting Forest Pathologist and Special Investigator for the New York State Conservation Department, conducting investigations on forest diseases in the artificially established Municipal forests of the City of Rochester, New York, which are located on the watersheds of Hemlock and Canadice Lakes. About the middle of August Dr. York gave a special talk on "Idle Lands and Reforestation" before the Rotary Club at Wayland, New York, and in the following week he conducted a field tour for the members of the Club through the forests mentioned above.

Paul J. Allen has been appointed Instructor in Botany and will be engaged in research and teaching in the particular field of Plant Physiology. Dr. Allen holds the degrees of Bachelor of Arts from Harvard, Master of Science from the University of Rochester and Doctor of Philosophy from the University of California, where he was latterly teaching in Botany.

Louis C. Wheeler has also recently joined the staff of the Department of Botany as Instructor. Dr. Wheeler is a graduate of the University of California, continuing his studies towards the degrees of Master of Science at Claremont College and Doctor of Philosophy at Harvard. His experience in Botany includes an Assistantship at the Gray Herbarium and Instructorships at the University of Missouri and the American University.

Doctor Wheeler is currently engaged in work on the proposed Flora of Pennsylvania and on the classification and distribution of the *Euphorbiaceae* (Spurge or Castorbean Family), which family furnishes over 95 percent of the world's natural rubber. He has been responsible for checking the scientific names of this plant family for the second edition of Standardized Plant Names, which is to be published shortly.

James Lambert, Superintendent of the Botanic Garden at the Department of Botany, returned in September from a month's plant collecting tour in Mexico, travelling by way of Nuevo Laredo, Victoria, the Sierra Madres and the basin valley to Mexico City, thence by way of the Sierra Nevado Mountains to Cholula, Puebla and Orizaba Mountain to Fortin—famous for its gardenias and as the home of *Mimosa pudica* (Sensitive Plant). Specimens of plants collected in the desert, mountains and tropics are now being identified for permanent use in the University and Arboretum Herbaria.

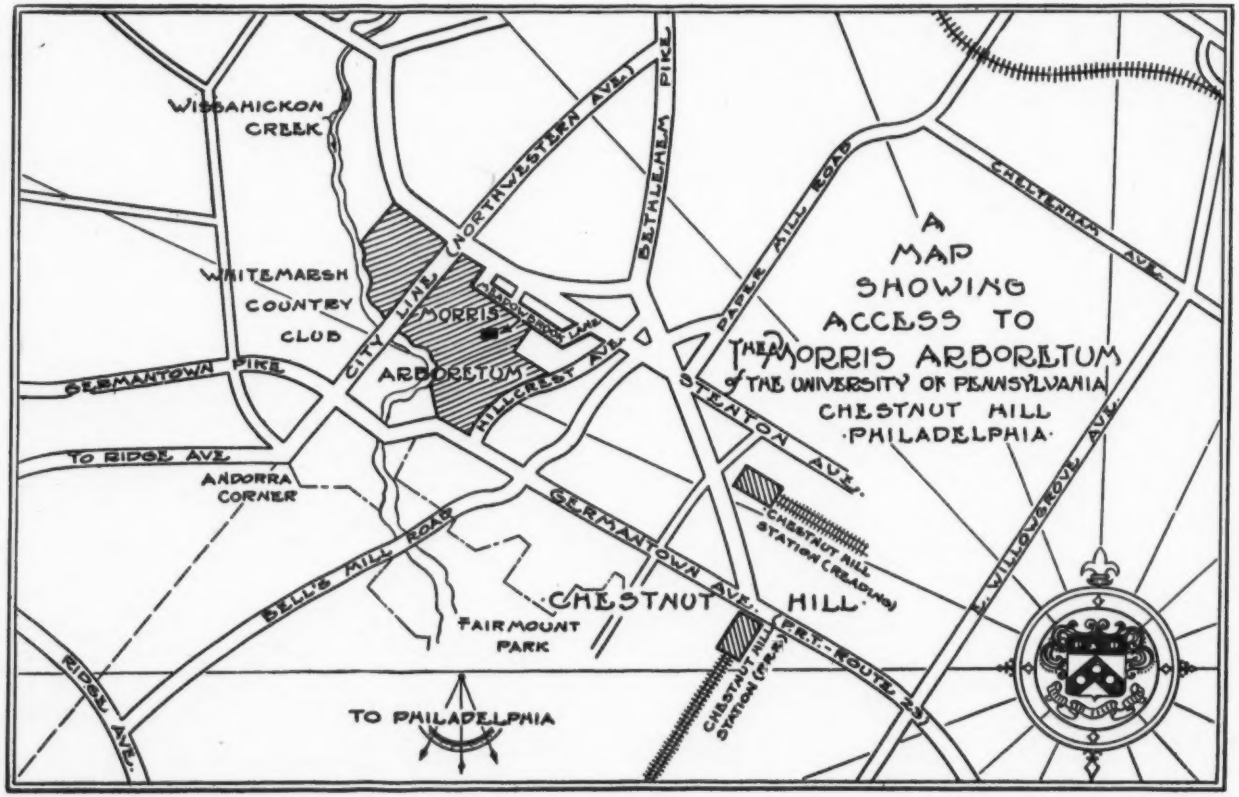
Mr. Lambert delivered a radio broadcast on the subject "Protecting Plants for Winter" as guest speaker on the WCAU Farm Hour on November 22, and is continuing a series of talks on "Plant Exhibits" at the monthly meetings of the Botanical Society of Philadelphia.

Spencer H. Davis, Research Assistant in the Arboretum, attended the National Shade Tree Conference at Washington, D. C., on August 27. Mr. Davis is author of an article entitled "Fertilizing Precautions to Tree Men" appearing in *Arborist's News*, Vol. 6, No. 6, 1941 and of a second to appear in a forthcoming issue of *Science* on the subject: "Sclerotium Bataticola a Cause of Damping-Off in Conifer Seedlings."

Henry T. Skinner, Curator of the Arboretum, has been reelected Vice-President of the American Association of Botanic Gardens and Arboretums, and continues as Department Editor of *Parks and Recreation*, the Official Publication of the American Institute of Park Executives and affiliated Societies. He attended a meeting of the above Association at Morton Arboretum, Chicago, Illinois, on October 11 and was appointed Association Delegate to the National Council on Plant Names which met in New York City on November 22.

Mr. Skinner has been invited to address the Pennsylvania Horticultural Society on the subject of "English Gardens" on January 13 and, discussing the "Preparation of Plants for Exhibition," will be a guest speaker for the Judging Course of the Federated Garden Clubs of New York State being held in New York, January 13-16.

The Morris Arboretum was awarded a Silver Medal by the Pennsylvania Horticultural Society for its exhibit of ornamental berried shrubs again staged in cooperation with the Arthur Hoyt Scott Foundation at the Fall Flower Show at Swarthmore College. Mr. John Tonkin and Mr. Joseph Adams of the Arboretum share credit with Mr. Harry Wood and Miss Smith of the Arthur Hoyt Scott Foundation for the annual success and popularity of this exhibit.


A
MAP
SHOWING
ACCESS TO
THE MORRIS ARBORETUM
of THE UNIVERSITY OF PENNSYLVANIA
CHESTNUT HILL
PHILADELPHIA
WISSAHICKON CREEK
WHITEMARSH COUNTRY CLUB
CITY LINE
NORTHWESTERN AVE.
BETHLEHEM PIKE
PAPER MILL ROAD
CHELTENHAM AVE.
MORRIS ARBORETUM
HILLCREST AVE.
GERMANTOWN PIKE
TO RIDGE AVE.
ANDORRA CORNER
STENTON AVE.
CHESTNUT HILL STATION (READING)
GERMANTOWN AVE.
BELL'S MILL ROAD
CHESTNUT HILL
FAIRMOUNT PARK
P.R.T.-ROUTE 23
E. WILLOW GROVE AVE.
RIDGE AVE.
TO PHILADELPHIA
CHESTNUT HILL STATION (P.R.R.)